

SPECIAL ISSUE

The *Indaganda* Survey of the Prussian Frontier: The Built World, Logistical Power, and Bureaucratic Knowledge in the Polish Partitions, 1772–1806

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The *Indaganda* is an obscure but widely used survey designed by Prussian administrators to gather territorial information, especially about provinces acquired in the Polish Partitions (1772–1795). This essay uses the *Indaganda* of South Prussia—a highly urbanized province annexed in the Second Partition—as a nodal point in Prussia’s efforts to manage and control territory by using material means to transform the natural and built worlds. Prussian patterns of eighteenth-century infrastructure development were filtered through this survey, eliciting information that formed a knowledge base for bureaucratic administration, infrastructure development, and cartographic visualizations. The *Indaganda* and its implications for the built world were expressions of the state’s exercise of logistical power: the use of material means to insert its presence into daily life, to assert its prerogative to control things and people, and to express its right to govern both. Finally, this essay argues that the bureaucratic curation of technical knowledge, which operationalized logistics, facilitated the integration of technical experts into the Prussian state bureaucracy.

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The *Indaganda* and Logistical Power

Indaganda: things which must be hunted or tracked down. Prussian officials used the term as the lead word in the title of their eighty-two-question survey of 251 cities and towns in South Prussia, the newest province to join the realm after the Second Polish Partition of 1793.¹ The moniker was ominous. It suggested military-like surveillance techniques behind enemy lines rather than the collection of information for administrative, military, and taxation purposes, as the survey was intended to do. Earlier territorial acquisitions in the east—notably Silesia in 1740 and West Prussia in 1772—had already challenged Prussia’s governance practices and unleashed pressures on its bureaucracy. Surveys, some also called *Indaganda*, were typical responses to compensate for territorial ignorance and had already been used in the town of Breslau/Wrocław in Silesia and in the provinces of Pomerania and West Prussia.² They rendered colonial spaces knowable and manageable.³ South Prussia was more challenging. A highly urbanized province with fewer German speakers and a greater number of Catholics and Jews, it was a frontier space, administratively illegible and posing palpable challenges to the authority and power of the state.⁴

¹ The survey responses are transcribed with the original questionnaire in Waśicki, *Opisy Miast Polskich*. This collection differs only slightly from the archival record.

² Other means of collecting information included human intelligence, such as that gathered by Alexander von Humboldt in Silesia (1792), Pomerania (1794), and West Prussia (1794). Zielnica, *Alexander von Humboldt*, 13–16, 21–37.

³ On surveys as forms of management, see Srinivasan, “Political Life of Information,” 9.

⁴ Treating the Polish Partition space as a frontier is adapted from Black, *Geopolitics*, 20–51. Prussia did not know its older provinces any better. Herzberg, “Preußischen Staat,” 10.

This essay treats the *Indaganda* as a conceptual node in the administration's efforts to transform its newest colonies in Central Eastern Europe into manageable spaces between the First Polish Partition of 1772 and the Napoleonic invasions of 1806 when Prussia lost the territory of the Second and Third Partitions (1793, 1795).⁵ The survey solicited information on urban populations, the urban economy, and the material conditions of urban life. Questions concerning natural resources and the built world were particularly salient. By the time of the Second Partition, Prussia's bureaucracy had over a half-century of experience with infrastructure development, especially with projects it deemed economically beneficial, such as land melioration, river rectification, canals, forestry management, and city planning schemes designed to prevent fires. The *Indaganda* channeled these experiences into questions yielding information useful for development, management, and ultimately governance over its new province of South Prussia.

Prussia's eighteenth-century strategies of infrastructure development, construction practices and building regulations, and aesthetics of planning were intended to enhance economic development and reduce the risks of costly disasters, especially fires and floods, which were endemic at the time. These strategies are expressions of control and domination known as *logistical power*, a concept developed in depth by the historical sociologist Chandra Mukerji.⁶ Logistical power is a counterpoint to Max Weber's definition of the state as possessor of a monopoly on violence, a form of strategic power.⁷ Logistical power complements strategic power: it accentuates the state's preoccupation with the real and symbolic significance of the material world—both natural and human-made—and its ability to manipulate and transform it. The exercise of logistical power precipitated conflicts between traditional elites, aristocratic or bureaucratic, and those in command of technical knowledge and its applications, nascent technocrats. According to Mukerji, logistical power expands Marx's claim that "social orders are grounded in material relations" by considering what Marx ignored: the role and rule of things.⁸ Logistical power projects the state's bureaucratic ability to plan, execute, and manage technical projects that only it could organize and financially underwrite. This exercise of logistical power depends upon the ability of bureaucracies to integrate, manage, and curate forms of technical knowledge—such as civil and hydraulic engineering—to further state ends.

While logistical power was not new to the seventeenth century—one thinks of empires that cultivated and deployed technical knowledge for imperial ends, such as civil engineering in the Roman Empire, shipbuilding in the Ming Dynasty, and navigation in the Spanish Empire—Prussia's development of logistical power grew following the Peace of Westphalia in 1648. The solidification of its territorial state coincided with the intensification of its interest in natural and technical knowledge. State-supported cartography—measuring distance and altitude—began to replace local mapping projects by the end of the seventeenth century, making the state's territory visible, if only in symbolic terms and—as was customary at the time—if only to the few allowed to see the most sensitive among the state's secrets. But territoriality meant more than just the representation of space: it also entailed the ability to project visible signs of control over it. State bureaucracies seized scientific and technical knowledge by supporting: scientific academies with their prize questions for solving seemingly intractable practical problems, like diverting rivers and avoiding flooding; translations of technical works that could be used for undertaking projects in the built world (e.g., canals and other transport systems); and the reform of weights and measures for regulating and standardizing infrastructure, thereby taking metrological practices out of local hands and centralizing standards of measurement in state bureaucracies. Infrastructure projects were visual demonstrations of the state's ability to manage and manipulate natural forces through the construction and management of the built world.

Mukerji's primary example of the state's exercise of logistical power is the Canal du Midi—an audacious project that linked the Mediterranean and the Atlantic across France—constructed in the latter half of the seventeenth century under Jean-Baptiste Colbert.⁹ Other scholars have expanded the domain of logistical power by demonstrating how modern bureaucracies deployed technologies and knowledge. Patrick Joyce has argued that the appropriation of artifacts—including paperwork, file systems, maps, postal systems, sewers, communication systems, engineered land, and educational practices—amplified bureaucratic power and modes of governance in the British Empire.¹⁰ Patrick Carroll has extended this analysis to nineteenth-century Ireland, identifying the country as a laboratory for experiments in statecraft using engineering and

⁵ Prussia regained about half of South Prussia (later called Posen) at the Congress of Vienna in 1815, but not the other territory from the Second (1793) and Third (1795) Partitions.

⁶ Mukerji, "Jurisdiction"; Joyce and Mukerji, "State of Things."

⁷ Weber, "Politics as a Vocation," 78.

⁸ Mukerji, "Territorial State," 402–3.

⁹ Mukerji, *Impossible Engineering*. Also see: Mukerji, "Space and Political Pedagogy"; "Material Practices of Domination."

¹⁰ Joyce, *Rule of Freedom; State of Freedom*.

the built environment to produce a material political state. He has even suggested that bureaucratic forms of knowledge based on the use of scopes, meters, and graphs created a “data state,” twenty-first century claims to the same notwithstanding. “Modern statecraft,” he concluded, “is science-based as well as coercion-based.”¹¹ This Prussian case fills a temporal gap—the eighteenth century—between these three studies and expands the geographical domain to central Europe. Using infrastructure as a means to exert control over territory—that is, to exercise logistical power—triggered an expansion of “bureaucracies as knowledge” by multiplying project paperwork, decision-making practices, economic assessments, risk determination, and infrastructure management and maintenance.

The *Indaganda* survey of South Prussia in 1793 inaugurated Prussian efforts to know and control this new colonial space. The first part of this essay sets the *Indaganda* in the context of eighteenth-century Prussian patterns of infrastructure development. It then addresses how the *Indaganda* fit into the framework of the state’s bureaucratic knowledge about space acquired in the Polish Partitions: how that knowledge was organized, how it became manifest, and how it was implemented. The survey provided focal points for structuring the archive, the official repository of bureaucratic decisions, reports, and practices. This file system became the paper-based expression of organizational categories and decision-making practices. Visualizing colonial territory through infrastructure planning and development is treated in the third section. Finally, this essay explores the consequences of deploying technical knowledge in the exercise of logistical power, including how technical experts challenged traditional Polish and Prussian authorities and created niches for themselves in the central bureaucracy. The *Indaganda* can thus be viewed as a synecdoche of the state’s practices for knowing and managing space its bureaucrats sought to dominate.

The *Indaganda* in South Prussia

South Prussia was urbanized, had a greater number of Polish- and Slavic-speaking subjects than German ones, had more powerful nobles and Catholic prelates, and was largely Catholic and Jewish rather than Lutheran or Calvinist. Prussia’s central bureaucracy was more accustomed to administering small towns and villages in agricultural areas populated by German-speaking subjects than it was to overseeing a multiethnic urban region. While the geography of South Prussia was similar to Brandenburg’s—sandy and laced with marshes—South Prussia’s hydrological features surpassed what Prussia had managed to date: notably, a large and prosperous harbor in Danzig/Gdańsk, nearly the entirety of the Warthe/Warta River, and almost all of the Polish-Lithuanian Commonwealth’s most culturally revered and economically important waterway, the Weichsel/Wisła (**Figure 1**).¹²

Drawn up quickly and published in May 1793, the survey was known officially as the “*Indaganda*, or Topographical-Statistical Questions about the Condition and Nature of the Town of [Name] in the Inspection of the War- and Tax-Administrator [Name].”¹³ Designed to elicit the socioeconomic condition of towns that fell under the supervision of a tax administrator (*Steuerrat*), the survey’s main purpose was to coopt financial resources, especially excise taxes, for the Prussian treasury. Economic conditions at the time were precarious: Prussian taxation schemes led to urban decline in Silesia and armed resistance in Danzig/Gdańsk. Tax administrators, though often untrained, were strategic links between local governance and Berlin. They not only collected taxes and controlled town treasuries, but also introduced and implemented state policies, including fire ordinances, building regulations, and infrastructure projects. Alongside the *Steuerrat*, Prussia used its General Directory (*Generaldirektorium*), established in 1723 as an umbrella bureaucracy under which other specialized departments fell to suppress urban autonomy.¹⁴ Resistance to this *despotism berlinensi*, as it was called by the *Bürgermeister* of Thorn/Toruń Christian Klossmann in 1772, was growing in royal towns falling directly under the Crown (*Immediatstädte*) and towns leased or owned by nobility (*Mediatstädte*).¹⁵ A sense of urgency propelled the execution of the survey.

Gathering information proved difficult. Prussian bureaucrats conducting the survey often arrived without knowing local magistrates or conditions. They asked questions and wrote their answers in German, but few residents knew German, so replies included incomprehensible and misleading Polishisms translated

¹¹ Carroll, *Modern State Formation*, 23 (quote), 81–112.

¹² Although located in West Prussia, Danzig/Gdańsk and Thorn/Toruń were not part of the First Partition, but the Second. German and Polish place names are paired throughout.

¹³ “Indaganda oder topographisch-statistische Fragen über den Zustand die Beschaffenheit der Stadt ... in der Inspection des Krieges und Steuer-Rath,” in Waśicki, *Opisy Miast Polskich*, 1:1–8. A smaller 54-question survey, which focused on agriculture, was used in the villages of South Prussia.

¹⁴ Originally, it was thought that South Prussia and New East Prussia would not report to the General Directory, but to the Crown. Bussenius, *Preußische Verwaltung*, 136–37.

¹⁵ Friedrich, “Development of the Prussian Town,” 147.

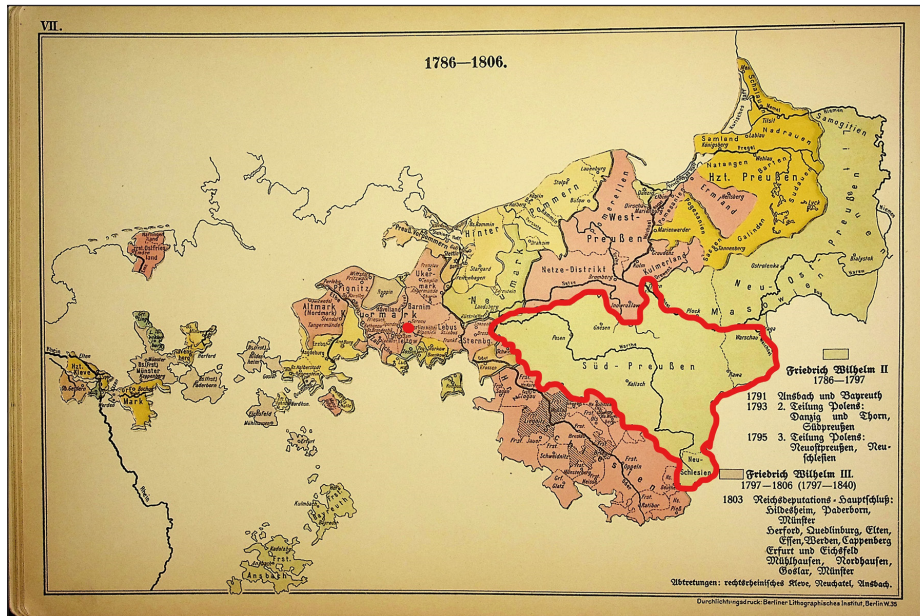


Figure 1: Prussian 1786-1806. South Prussia's original border (1793) is outlined in red. To the left of the province, a red dot marks the location of Berlin.
 Source: Mück, *Atlas*. Plate VII.
 Digitized by the author.

into German. Queries about the town treasury often led to blank stares. The collective surveys took long to compile, reliable sources were rare, and replies were not cross-checked. Accurate population counts were especially tricky: Jews feared self-identification would mean losing privileges the Polish-Lithuanian Commonwealth had granted them, while residents of private towns believed that being counted would result in higher taxes. Sometimes Prussian officials resorted to filling out the questionnaire themselves to project the illusion of completeness and bureaucratic competence.¹⁶

The structure and content of the survey reflected the administration's priorities for managing the newly acquired space. Fiscal matters were paramount, and a majority of questions addressed these, particularly revenue from excise taxes. Demographic data, including religious affiliation, revealed the government's interest in the number of Protestants, Catholics, and Jews, the first being an indication of the proportion of German speakers in the province. Medical resources were a gauge of the ability of the region to respond to health crises, such as contagion or plague. Matters concerning the built world and natural resources cut across twenty-three of these questions, with an additional nineteen dealing specifically with the town's spatial arrangement, system of weights and measures, natural resources (including access to water), buildings, roads, and vulnerability to fires. Notably, an early question in the survey asked if the town was located by a river and if there were bridges or fords. Both were infrastructural features that required maintenance and so could be drains on the state's fiscal resources. A riparian location was a further worry due to periodic flooding, which posed both risks to the population and pressures on state finances when post-flood reconstruction was needed.¹⁷

Many of these questions drew upon historical precedent in infrastructure development, especially the lessons learned during the reign of Frederick the Great (r. 1740–1786) through trial and error and later through more institutionally organized means of how to develop new territory or respond to devastating effects of wars, flooding, and fires.¹⁸ Patterns for urban development evolved into two well-defined practices, *Établissement* and *Rétablissement*: the former for the building of new towns (as for colonists, often on new land resulting from melioration); and the latter, for the reconstruction of ones destroyed by natural or human forces, including war.¹⁹ Dealing with the natural environment, especially rivers, was more difficult.

¹⁶ Waśicki, "Wstęp"; Warschauer, "Städtewesen," 470.

¹⁷ Waśicki, *Opisy Miast Polskich*, 1:1–8.

¹⁸ Froese, *Kolonisationwerk Friedrichs des Großen*, 18–19; Stadelmann, *Friedrich der Große*, 5–41; Stadelmann, *Friedrich Wilhelm II*, 1–63.

¹⁹ For examples of the principles of each of these, see Moegelin, "Rétablissement"; Helmigk, *Oberschlesische Landbaukunst*; Froese, *Kolonisationwerk Friedrichs des Großen*; Terveen, *Gesamtstaat und Rétablissement*; Baier et al., *Rétablissement*.

Here one-of-a-kind projects, like the shortening of the Oder/Odra River between 1747 and 1753 and the construction of the Bromberg/Bydgoszcz Canal in West Prussia in 1773–1774, which linked the Netze/Noteć and Brahe/Brda Rivers and created a continuous riparian route between the eastern and western sections of Prussia, added substantially to the bureaucracy's toolbox of skills, practices, and technical knowledge.²⁰

Particularly salient was the survey's focus on the risk of fire, another costly state expense where extensive reconstruction (*Rétablissement*) was often needed. At the time of the South Prussian *Indaganda* in 1793, technical experts were celebrating the success of rebuilding the Brandenburg town of Neuruppin, destroyed by a devastating fire in 1787. Fire-prevention measures dominated reconstruction plans, creating a new urban aesthetic. They included a greater number of stone and brick buildings, wider streets, tile roofs, and more open space. All were prescribed by official bureaucratic regulations (*Reglement*) originating in technical expertise and guided by two principles: a way of thinking "in terms of greater security for the future," and the aesthetic ideal of geometrical regularity, also considered a fire prevention measure.²¹ Hence the *Indaganda* survey elicited conditions that could be used to determine a town's vulnerability to fire, including the number of fireplaces, types of roofs (straw was dangerous but tile was not), size of open spaces, distances between buildings, and finally, fire-fighting equipment, including private and public fountains, hoses (and what type), fire buckets, fire axes, and fire ladders. Equally important was the availability of building materials—stone, lime, and clay—considered prophylactics against fire (**Figure 2**).²²

The survey's strategy was the result of having consolidated experiences gained since the end of the Seven Years War in 1763 when the demands of reconstruction outstripped available expertise. Rather than enlisting foreign experts or military personnel opportunistically as had been the practice, after 1763 the same technical experts were recycled through similar projects, which consolidated technical practices. Three institutional innovations bolstered this stabilization of expertise. The first was the establishment of a public works bureau, the *Oberbaudepartement*, in 1770.²³ Besides providing a bureaucratic home for technical experts who offered courses through the department, the *Oberbaudepartement* was charged with eliminating "error-laden old routines" that local governing boards had insisted on using and meliorating the "public suffering" caused by bureaucratic ignorance.²⁴ The second change was the inauguration in 1770 of a surveying examination, which normalized measuring practices throughout Prussia. The third innovation



Figure 2: Neuruppin in 2019 still exhibited the principles guiding its rebuilding after 1787: wide streets, open spaces, tile roofs, evenly spaced windows, and the absence of wood. Photographed by the author.

²⁰ Heinrich, "Friedrich der Große"; Hermann, "Nun blüht es"; Blackburn, *Conquest of Nature*, 21–76. For an assessment of the social turbulence and environmental damage unleashed by these hydrological projects, see Gudermann, "Bedeutung der friederizianischen Landeskulturmaßnahmen."

²¹ Herzberg, "Rétablissement von Neu-Ruppin," 41; Reinisch, *Wiederaufbau der Stadt Neuruppin*. Neuruppin's style earned it the moniker "the most Prussian of all Prussian towns."

²² Waśicki, *Opisy Miast Polskich*, 1:1–8.

²³ Zitelmann, "Kurze Darstellung"; Strecke, *Anfänge und Innovation*, 86–116; Strecke, "Prediger, Mathematiker und Architekten"; Olesko, "Geopolitics."

²⁴ Zitelmann, "Kurze Darstellung," 91; GStA PK, II. HA Generaldirektorium (hereafter GD), Abt. 3 Generaldepartement, Tit. XII, Nr. 1, Bd. 1, *Errichtung der Oberbaudepartements* (1766) 1770–86, fols. 2, 27–45, 54, 55–55v. For the early years of the *Oberbaudepartement*, see Strecke, *Anfänge und Innovation*, 55–85.

was the establishment in 1793 of a new unit of length for construction, a recalibrated Rhenish rod.²⁵ Silesia, formerly exempt from adopting Prussian measures to ease the province's amenability to assimilation, was now compelled to conform to Prussian measures for construction. These institutional changes helped to bolster the exercise of logistical power over the partition space. The *Indaganda* proved to be a powerful instrument of bureaucratic management: it made towns legible for governance by providing information on pre-selected issues that mattered.²⁶

The *Indaganda* of Lissa/Łeszno in the Department of Posen/Poznań

As an example of how the survey worked, consider the town of Lissa/Łeszno in the District of Fraustadt/Wschowa in the Department of Posen/Poznań, the largest and most urban of the three departments in South Prussia along with Kalisch/Kalisz and Warsaw. Lissa/Łeszno, a *Mediatstadt* owned originally by the Polish nobleman Anton Fürst Sulkowski (1734–1796), was in normal times an economically well-to-do and solidly populated town of 6,820 souls, one of only three towns with a population over 5,000.²⁷ At the time of the survey, however, Lissa/Łeszno was recuperating from a disastrous fire on June 2, 1790, which destroyed over eight hundred homes. Partial rebuilding had resulted in a large number of residences made out of stone or brick (119), but only seven had tile roofs and the remainder, shingles (including six residences outside the wall). Most of the other new homes, however, were wooden (257), and all of these had shingled roofs rather than the preferred tile. Thirty-four barns were fortunately located outside the town's boundaries, lowering the fire hazard. Deserted buildings, another fire hazard, were still relatively numerous (456 in the town and 25 outside). Ninety-three windmills supplied energy for the town's operations. For building, wood, stone, and clay were available locally, while lime was imported from the neighboring province of Silesia. Water supplies seemed adequate with twenty-five fountains in the town and forty on the outskirts—important figures for water management for general use and for combatting fires. Unfortunately, the number of fireplaces was relatively high at one for about every ten persons (367 in the town and 342 outside, for a total of 709), and firefighting equipment was still meager (two metal spray hoses, two wooden ones, nine fire buckets, twelve fire axes, and eight fire ladders). Overall, despite the large number of stone or brick buildings and the rebuilding in progress, Lissa/Łeszno had a considerable risk for fire (**Figure 3**).²⁸

After Lissa/Łeszno's survey was completed, Prussian officials reviewed it and added a cover letter outlining its main findings and posing questions regarding governance and future development. *Steuerrat* Andreas Otto von Hirschfeld (1737–1812) did this for Lissa/Łeszno and forwarded his assessment to the district seat of government, Fraustadt/Wschowa, which then sent its review to Berlin. On June 28, 1794, Hirschfeld explained that the information had been collected “in various manners” and that at this point in time “closer information [was] required,” indicating that the survey began an iterative process of information collecting and assessment. The survey's information, although only a snapshot of particular issues at a particular moment in time, was then analyzed and became the foundation of recommendations for governance, infrastructure development, and policy. Hirschfeld had a few recommendations for Lissa/Łeszno's economic development. Most pressing were the lingering questions of rebuilding after the last fire and fire protection in the future. Residents had to be convinced to line the outside of wooden structures with brick as well as to use tile roofs, which helped to stem the spread of fires. That there were only nine fire buckets bothered him; their number, as well as the number of other fire-fighting instruments, were insufficient for the size of the town. Moreover, there were no main or subsidiary watchmen in the town who could warn residents of fire and other dangers.²⁹

The Lissa/Łeszno survey is instructive. It demonstrates how the *Indaganda* was not only a source of socioeconomic information, but also a vision of how logistical power could be distributed. It shows how bureaucrats imagined, configured, and depicted the world in order to manage it. In seeking only certain

²⁵ GStA PK, II. HA GD, Oberbaudepartement Abt. 30 I, Nr. 144. Die Einführung eines allgemeinen neuen Berlinischen Feld- und Bau-Maaßes, 1770–1802; GStA PK, II. HA GD, Abt. 7 Ostpreußen II, Nr. 546. Einführung eines egalten Feld- und Baumaßes bei allen Vermessungen und Bauten, (1766) 1770–1775.

²⁶ On states and legibility: Scott, *Seeing Like a State*; Stoler, *Along the Archival Grain*, 1; Foucault, *Security, Territory, Population*, 34, 240, 287.

²⁷ General Directorium Südproußen VI. Ortschaften 1536 Lissa, in Waśicki, *Opisy Miast Polskich*, 1:202–7; original in GStA PK, II. HA GD, Abt. 10 Südproußen, Tit. VI, Nr. 1536, Zustand der Stadt Lissa. Topographisch-Statistischer Fragenbogen (*Indaganda*); Warschauer, “Städtewesen,” 461.

²⁸ Waśicki, *Opisy Miast Polskich*, 1:202–7.

²⁹ Hirschfeld, “*Indaganda*,” 28 June 1794.

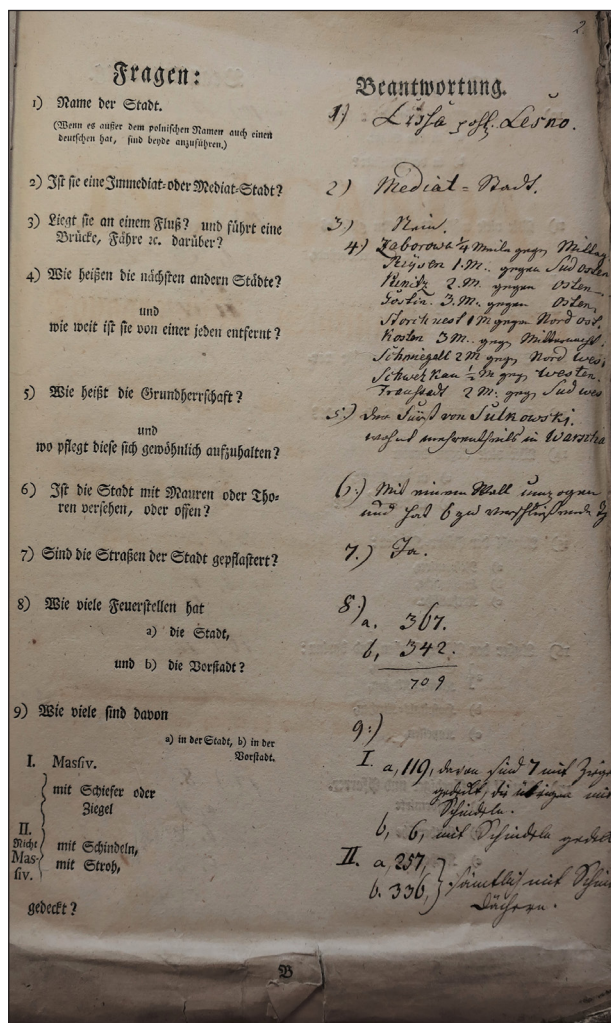


Figure 3: First page of Lissa’s *Indaganda* survey. 1793.
 Source: GStA PK II. HA GD, Abt. 10 Südpreußen, Tit. VI, Nr. 1536. Zustand der Stadt Lissa. Topographisch-
 Statistischer Fragebogen (*Indaganda*).
 Photographed by the author with permission of the Geheimes Staatsarchiv Preußischer Kulturbesitz.

types of information through the *Indaganda*, the Prussian bureaucracy acted as a filtering agent, choosing from the vast amount of information present in urban settings only that which mattered to them. When trying to gauge the socioeconomic conditions of the urban world Prussia had acquired, its bureaucracy did so by filtering that information through a preconceived spatial and material configuration of the built world. In turn, it viewed the built world as existing in the context of the challenges of fire, which was a natural hazard, a financial liability, and a bureaucratic headache. Bureaucratic information was in this sense not dead, dry detail, nor was it merely a collection of data points. The type of information collected in the *Indaganda* pulsed in the sense that it identified financial opportunities to be seized as well as infrastructure projects to be initiated in order to control future events by avoiding fires.

The flip side of the *Indaganda* is its exclusions. If information made the frontier legible and susceptible to the exercise of power to Prussian occupiers, it did so only because the noise in the data was deliberately ignored. Or, expressed another way: the Polish land, the Polish built world, and the Polish way of life in these provinces were regarded as so disorderly that they could not be described in words—except by way of what they were not.³⁰ Histories of South Prussia, and indeed of the entire space of the partitions from the 1790s through the 1900s, are a testament to the power of the bureaucratic selections that instantiated this indescribability. While these histories rendered projects actually completed and projects the Prussian government hoped would be undertaken—in other words, the Prussian side of things where bureaucratic plans were more real than the Polish world before Prussian rule—exclusions and excuses for them were

³⁰ Hagen, *German, Poles, and Jews*, 39–40, 43.

deliberate. They were based on biased perceptions of the uselessness of land covered with sand or steeped in water: that it was wilderness, disintegrated, deserted, in decay since the Seven Years War, and with a dampness that was the enemy of culture.³¹ What actually was “there” did not matter.

Even after thirteen years of gathering information on three new provinces—West, South, and New East Prussia—August Carl Holsche, who had worked in the South Prussian justice department and later as the head of the district of Belostock/Bialystock, thought it necessary to provide only a mere sketch of the history of Poland because any more would be boring, unsuitable for a work on the eastern provinces, and of little service to his readers. He did not even report on the population or the surface area of these three provinces, which he claimed could only be known “with a high degree of probability.” But this perceived emptiness, for the colonizer, was a virtue; for this was where “civilization” could enter through land melioration and infrastructure projects.³²

The Survey and the Archive

The *Indaganda* was only the beginning of a reality created on paper in anticipation of future material improvement. It was reprocessed; cast in new form (the table, so the most important items could be seen and compared at once); filed in the archive where it generated subsidiary documents that fleshed out its sparse words in greater detail; and then, through other administrative documentary forms (edicts, decrees, prescriptions, regulations) that elaborated on how, exactly, its statements would be realized in the physical world, created the world that would actually be administered, again on paper, with each iteration contributing to the reservoir of bureaucratic knowledge that undergird logistical power. Bureaucrats brokered between this paper world of the archive and the “real” world outside. This “real” world was not the Polish world before the partitions, but an administrative construction that was governable.³³

The table came first. Forty-nine of the most important cities were chosen (Lissa/Łeszno among them) for a table whose columns listed the *Indaganda*'s most important categories: Were the streets paved? How many fireplaces? How many stone or brick homes? How many wooden homes, and with what kind of roof—straw or shingles? How many deserted lots? Number of residents? Number of Catholics, Protestants, and Jews? Information filtered through the survey's questions created a collective image of the towns and, by extension, of the province. Of note: the ratio of Protestants to Catholics was an indication of the relative number of Germans to Poles, a ratio that decreased from west to east, so a mental map of “Germanness” could be created. For the most part the table presented data that was flattened: that is, it revealed little more than it said. For instance, while Lissa/Łeszno's Jewish population was high (2,991), it was second to Posen/Poznań's (3,021), with Rawitsch/Rawicki a distant third (1,087). And in number of residences, Lissa/Łeszno was fourth behind Posen/Poznań, Fraustadt/Wschowa, and Rawitsch/Rawicki, despite the fact that its population was second only to Posen/Poznań's.³⁴ Fire had thus taken its toll on Lissa/Łeszno's built world.

The *Tektonik* or structure of the South Prussian section of the Prussian Secret State Archive (*Geheimes Staatsarchiv*) from 1793 to 1806 was drawn from the categories of the *Indaganda*. Its organization facilitated the retrieval of information. The condition of towns as rendered by their *Indaganda* survey marked the entry point of the archive, which was followed by larger or smaller documentary collections depending on whether or not fires had occurred or if *Rétablissement* was in progress. Reports on the state of public buildings usually appeared next in this order of information, followed by more specialized reports on such topics as breweries, the condition of marshes near rivers (especially the replanting of banks and sandbars after floods), the state of the *Feuerpolizei* (fire brigade), the health of forests, the construction of new industries (such as saw mills), land given to colonists, and the measurement of towns and the surrounding areas.³⁵ Lissa/Łeszno's *Indaganda*-based archival acts before 1806, for instance, were comprised of eleven that treated buildings, *Rétablissement*, and fire-prevention measures (the establishment of a new brick factory in 1797); six covering industry and trades, including clothing and munitions manufacture and beer and brandy production; nine on governance, finances, and legal matters; and two on religious issues and Jews. Add to this the original *Indaganda*, and altogether the bureaucratic paper trail for Lissa/Łeszno covered thirty-one acts.³⁶

³¹ Bussenius, *Preußische Verwaltung*, 28, 30, 45, 68, 70–77, 302–6; Stadelmann, *Friedrich Wilhelm III*, 16–19; Holsche, *Geographie und Statistik, Netzdistrikt*.

³² Holsche, *Geographie und Statistik*, 1:[unpaginated preface], 125; Holsche, *Netzdistrikt*, iii–vi. On civil engineering as an agent of civilization in Prussia: Olesko, “Geopolitics,” 41, 43–44.

³³ This section draws on Mawani, “Law's Archive.” For a less theoretical and more in-the-files view of the bureaucratic archive, see Joyce, *State of Freedom*, 143–84.

³⁴ “Aus den *Indaganda* über den Zustand der Südpreußischen Städte bei der Übernahme” [1793], in Warschauer, “Städtewesen,” 487–90.

³⁵ A sampling includes: GStA PK, II. HA GD, Abt. 10 Südpreußen, VI Nrs. 60, 63, 90, 112, 113, 1005, 1082, 1286, 1295, 1361, 1599.

³⁶ GStA PK II. HA GD Abt. 10 Südpreußen VI, Nrs. 1506 to 1536.

Each step in this record-keeping process increased the work of the bureaucracy and extended the realm of what was possible administratively in a culture where “all transactions were negotiated in writing.”³⁷ Following Foucault, the Lissa/Łeszno archive “reveals the rules of a practice that enables statements both to survive and to undergo regular modification.”³⁸ Foucault’s description helps us to understand why, through the archive, the *Indaganda* is also prospective, reaching into and shaping the future. Rules, decrees, edicts, and other documents found in the archive governed over the categorizations that had guided the *Indaganda*.

For instance, Prussians considered Polish craftsman unqualified “for the most important needs of the fatherland,” especially infrastructure development, because they had not properly learned the principles of *Bauwesen*, or civil and hydraulic engineering. The former Polish-Lithuanian Commonwealth actually had a healthy population of craftsmen, but what Prussian bureaucrats registered was that few knew how to manufacture the bricks and tiles that Prussian planners wanted. Prussia instituted quality control first by testing Polish craftsmen to see if they really knew how to do what they claimed they did and, to make sure no one slipped through the system, enacted reprimands for violations of their code. The second solution was to change instruction in the *Oberbaudepartement* from informal to formal courses in *Bauwesen*, including ones on the manufacture of tile and brick. When that effort foundered, a third solution was to facilitate the migration of qualified German-speaking craftsmen to South Prussia.³⁹ Prussia thus handled quality control as a part of governance: stipulating by decree what individuals could and could not do, thereby projecting the impression that the quality of the built world was preserved.

Berlin also reinforced this image by governing *things*. In Posen/Poznań, where building on deserted lots and the demolition of the city wall necessitated measuring terrain and creating a ground plan, Prussian administrators insisted on making the streets regular and straight, “not like hitherto where the homes were arbitrarily built hither and thither in entirely different directions.”⁴⁰ Geometrical order was a legislated matter that extended to the brick façades ordered wrapped around wooden *Fachwerkhäuser*. By decree, manufactured brick was standardized into specific sizes whose edges had to be sharp and not curved, crooked, or irregular.⁴¹ The list of forbidden material objects grew the more involved administrators became in South Prussia: no row houses, no straw or shingled roofs, no barns inside towns, and no wooden homes. Regulations like these were the sinews that linked technologies to the administratively built world. While these regulations created more paper in the archive, outside the archive they were instruments of human coercion and control, generating patterns of rule and compelling citizens to conform to bureaucratic standards. Appropriately, resistance took the form of bureaucratic non-compliance. Poles ignored a 1773 regulation establishing the 12-part Rhenish rod as the legal standard of length in South Prussia and continued to use their own local weights and measures over which Prussia never achieved complete control. As a form of resistance challenging the constructions of the colonizers, Polish aversion to Prussian rule speaks to the strength of local metrological practices.⁴²

Understandably the destruction, liability, and costs of fires—Neuruppin’s 1787 fire was still a fresh memory at the time of the Second Partition—were behind the regulations (*Vorschriften*) and penalties (*Maßregeln*) issued. These were essential for the restoration of material order. The Polish-Lithuanian Commonwealth did not have laws about how post-fire rebuilding would be funded other than freeing towns from taxes for a number of years. Lissa/Łeszno had been granted twelve tax-free years in 1790, and this was a key reason why Prussia wanted the town rebuilt forthwith. Funding, though, was not awarded without securing promises of adherence to regulations and exclusions that were duly recorded in the archive. Abiding by rules that restored order meant starting with uniform categorizations. With 245 dilapidated towns in South Prussia that were “little different from the wretched huts in the countryside,” administrators thought that only “the empty meaning of the word” gave them the status of towns, so they recommended reclassifying them as

³⁷ Dorn, “Prussian Bureaucracy I,” 411.

³⁸ Following Foucault, *Archaeology of Knowledge*, 129.

³⁹ Kohte, “Bauwesen,” 417, 419, 422–23 (“Von Voß an Posener Kammer betreffend die Zulassung nur geprüfter Handwerksmeister bei dem Wiederaufbau der Stadt Kalisch/Kalisz; Verfügung einiger baupolizeilicher Maßregeln,” 27 June 1793), 425–26 (“Der Geh. Ober-Baurath [David] Gilly erbietet sich von Voß, aus Anlass des Mangels an Baubeamten in Südpreußen einen Unterrichts-Kursus in dem höheren Bauwesen zu veranstalten,” 5 Aug. 1793); Warschauer, “Städtewesen,” 462, 509–13 (“Das Generaldirektorium erlässt ein generelles Regulativ betr. die Vergünstigungen für die in den Südpreußischen Städten sich neu Ansiedelnden,” 16 January 1794).

⁴⁰ Kohte, “Bauwesen,” 423–24.

⁴¹ *Ibid.*, 427 (“Publicandum wegen Einführung eines gleichförmige Maßes der in den Südpreußischen Ziegeleien zu brennenden Stein,” 23 September 1793).

⁴² Resistance was measured by the number of conversion handbooks that were published, such as Eytelwein’s *Vergleichungen der in den königlich-Preußischen Staaten eingeführten Maaße und Gewichte* and its second edition, *Vergleichungen der gegenwärtig und vormals in den königlich-preußischen Staaten eingeführten Maaße und Gewichte*. On the relationship between information and control, see Hevia, *Imperial Security State*; Srinivasan, “Political Life of Information.”

villages, which were governed differently. Prussian administrators attributed the poor condition of these towns to lax governance by local *Bau-Polizei* (construction supervisors), which had economic consequences because “a well-constructed town is indispensable for trade.”⁴³

The Survey and the Visualization of Space

The Prussian administrators’ “well-constructed town” takes us from the literary features of the survey to its visual ones, including the visual aesthetic it invoked. The visual field, and with it, the sense of sight, are integral to the survey, whose etymological origins invoke an overview of the whole with the intent to exercise power over it, as has been evident in classical surveys.⁴⁴ The *Indaganda*’s description read “topographical-statistical questions,” drawing attention to the region’s surface features. This survey favored visualizable patterns depicting, arranging, and prioritizing the built world, and hence guided assessments, planning, and policy according to the perceived and desired features of its three-dimensional surface. By virtue of its design, the *Indaganda* generated a world on paper, a bureaucratic reality, that in turn was a reference point for the bureaucratic mind whose task it was to work over that reality through infrastructure development governed by regulations. The *Indaganda* was the first step in communicating to a broader Polish public this Prussian bureaucratic sense of the built world, thereby creating a shared sense of space and of material reality.

Geometrical regularity was an overarching feature of the Prussian bureaucratic sense of space. Streets were to be perpendicular, bricks uniform, and even the space between windows was to be no smaller than the width of the window itself. An analogy can be drawn here to the way in which the toolboxes of eighteenth-century bureaucracies incorporated measure and number, which through their use, trained perception. The more the state rendered territory through number and measure, the more territory became an object of power and the more the state became an observatory, surveilling and recording spatial reality in quantitative terms. By highlighting only certain features of reality and making them visible, the state restricted the scope of what was knowable and therefore governable.⁴⁵ Conversely, what was invisible (or simply not captured) was unknowable and therefore ungovernable.

Take, for instance, how the *Indaganda* went from being a one-dimensional literary document to a two-dimensional cartographic one in the map of South Prussia constructed under the supervision of David Gilly (1748–1808) in 1802–03 (**Figure 4**).⁴⁶ Gilly worked as an architect, civil engineer, and surveyor in the Prussian bureaucracy, rising through the ranks from *Landbaumeister* to *Geheimer Oberbaurat* in Pomerania, West Prussia, and South Prussia where he supervised some of the most difficult hydrological projects.⁴⁷ The Gilly map, intended primarily for postal services, relied on *Indaganda* data for the distances between towns. The map increased the legibility of South Prussia’s geography, but only in terms the bureaucracy dictated. Earlier realities disappeared: gone from the map are the locations of noble or ecclesiastical estates. Marshlands still appear—land that Poles knew how to live on—but reworked land was more important. Gilly depicted the canals, meliorations, and settlements within the section of quadrant AI depicting Driesen/Drezdenko in West Prussia where the Netze/Noteć River was rerouted, the surrounding land drained, and Driesen/Drezdenko relocated and rebuilt so that a leg of the Bromberg/Bydgoszcz Canal could pass through its earlier location. Abutting the sinewy lines of rivers are the straight lines of drainage ditches for land melioration. Colonies are marked on reclaimed marshland. Forests, which were both a source of income and a resource to be protected, were depicted in detail (**Figure 5**).⁴⁸

The map was, however, of dubious value to Poles, who sometimes sabotaged Prussian projects and used older maps of the Commonwealth, which had been outlawed.⁴⁹ Despite their visual inscription on the map, the new South Prussian governing units—three departments and their internal districts—were difficult to

⁴³ Warschauer, “Städtewesen,” 484–85, 490 (“Von Voß verfügt an die Kammer zu Posen im Anschluss ein Specialgesuch eines Bürgers zu Lissa wegen feuersicheren Aufbaues der abgebrannten Gebäude zu Lissa und der Beihülft zum Rétablissement”), 499–502 (“Minister v. Voß beantragt beim König wegen des armseligen Zustands der Städte, welcher durch die Bauart ihrer Häuser von häufigen Feuerbrünsten heimgesucht werden, und deren größerer Theil in Dörfer umgewandelt werden soll, ... mit besonderer Rücksicht auf die kürzlich fast ganz abgebrannte Stadt Kalisch,” 31 May 1793).

⁴⁴ Yeo, “Social Surveys.”

⁴⁵ Behrisch, “Vermessen, Zählen, Berechnen.” On the relationship between visualizations and governability, see Dean, *Governmentality*, 32, 37, 41.

⁴⁶ Gilly, *Special Karte*.

⁴⁷ Lammert, *David Gilly*.

⁴⁸ Gilly, *Special Karte*.

⁴⁹ GStA PK, I HA Rep. 9, All. Verw. Fr. F2a, Fasz. 40 und 41 (1793–1801). Acta betr. Neue Landkarten der Teilung Polens (unpaginated; 26 August 1793, 30 August 1793, 24 October 1793).



Figure 4: Quadrants of the map of South Prussia.

Source: Gilly, *Special Karte*. Tableau zum Atlas von Südpreussen.

Source: Library of Congress, Geography and Maps Division (G6080 1803 .G5).

Photographed by the author with permission of the Library of Congress, Geography and Maps Division.



Figure 5: Driesen/Drezdenko (upper right). 1803.

Source: Gilly, *Special Karte*. Quadrant AI.

Source: Library of Congress, Geography and Maps Division (G6080 1803 .G5).

Photographed by the author with permission of the Library of Congress, Geography and Maps Division.

realize in practice due in part to poor Prussian surveying that failed to represent the borders accurately.⁵⁰ The Gilly map was thus a cultural construct, one that took its cues from the *Indaganda* and past practices, adding to them the future postal routes of South Prussia, which were also maintained by the state.⁵¹ Maps contributed to the illusion that space was malleable, could be reworked, and therefore controllable, even without the full cooperation of former Polish citizens. The map privileged space as a realm of the operation of power.

⁵⁰ Bussenius, *Preußische Verwaltung*, 80.

⁵¹ The postal system is also a part of the state's insertion of itself into the material reality of the everyday, a part of what Joyce calls the technostate. Joyce, *State of Freedom*, 52–142.

The Exercise of Logistical Power: Consequences

The *Indaganda* survey might have been an encore to how the bureaucracy would transform the built world of South Prussia, but subsequent measures initially fell far short of expectations. Frederick William II (r. 1787–1797) reluctantly approved funds for development, much to the dismay of his bureaucratic subordinates who wanted to continue Prussia's infrastructure development. Rebuilding Lissa/Łesno after the 1790 fire, though, continued apace. Diminishing the risk of fire was aided by the state's purchase of Lissa/Łesno from its owner, Anton Fürst Sulkowski, further reducing power among the Polish nobility.⁵² Berlin attempted to colonize the eastern, Polish-speaking sections of South Prussia with German-speaking residents, but Poles resisted. Improving land through melioration eliminated some swamps, but not enough for cultivating agriculture, establishing new cities for colonists, or making rivers more navigable by firming up banks. Estate management improved somewhat through state purchases, which set examples for others, but this decision just further antagonized former owners, Polish nobles.

The Minister of South Prussia Otto Karl Friedrich von Voß (1755–1822), an old guard Prussian bureaucrat with strong connections to Berlin and extensive ministerial experience east of the Oder/Odra, desperately wanted to enhance the navigability of the Warthe/Warta River, a project he assigned to David Gilly. The Polish uprising of 1794 undermined the plans and ended his tenure as minister. The Third Partition in 1795, which added the province of New East Prussia, added more pressures on an understaffed technical bureaucracy. Not until Frederick William III ascended the throne in 1797 did matters improve—especially with land melioration, street construction, river navigability, and the draining of lakes and bogs in South Prussia—and the bureaucracy's control over the built world reinstated.⁵³ Before then the efficacious exercise of logistical power was not always a foregone conclusion.

Behind the scenes of the public face of bureaucratic actions, internal struggles simmered as the constitution of the bureaucracy changed. The received image of the Prussian bureaucracy is that it was efficient, precise, punctilious, punctual, exact, and rule-abiding. To a certain degree this caricature is accurate. Von Voß knew the local features of every town through the *Indaganda*, but nonetheless “proceeded without further delay according to the guideline [*Richtschnur*] of Prussian practice, which in place of the earlier disorder and arbitrariness [of Polish practices], instituted order and lawfulness.”⁵⁴ Others were men of routine, loving order to the point of ridiculousness and punctuality to the point of pedantry.⁵⁵

The caricature dissipates upon closer inspection. Von Voß's replacement in 1794, Carl Georg Heinrich Graf von Hoym (1739–1807), considered deception part of his job and often doctored figures to match Berlin's expectations, as he had done for the Silesian census.⁵⁶ Moreover, many administrators in the partition area were retired military personnel who were offered positions in compensation for military service but were ill-suited for bureaucratic work. Hirschfeld was among them. He might have taken the examination for becoming a *Steuerrat* in 1781, but he, like others, only learned the rules of the game and not the substance. Despite being appointed *Oberforstmeister* in 1786, Hirschfeld did not know about forests or their management.⁵⁷ He was not alone, and Berlin knew it. Yet Berlin insisted on “a new type of bureaucrat” for South Prussia, one who would not do “pen work” (*Federarbeit*), but would deliver “urgently needed information” to local bureaucracies.⁵⁸ They also wanted a bilingual bureaucracy that could translate regulations and was capable of producing economic wonders in South Prussia, and this meant more than knowledge of another language.⁵⁹

The transition to Prussian rule in the partition area was rife with the potential to generate conflict and create enemies. Prussian-defined departments and districts replaced Polish voivodeships and powiats, town autonomy disappeared, and many Polish noble and ecclesiastical estates were sold to the Prussian nobility or German colonists. The imposition of the Prussian administration in South Prussia eclipsed the powerful role of the Polish nobility in the Polish-Lithuanian Commonwealth, a transformation that led predictably to an aristocratic uprising in 1794.⁶⁰ Prussian technical experts like Gilly, who were both information gatherers in

⁵² GStA PK II HA GD Abt. 10 Nr. 1510 Acta wegen des Brandes zu Lissa und das Rétablissement dieser Stadt, Bd. 1 (1793–96); Nr. 1511, Bd. 2 (1796–1804).

⁵³ Stadelmann, *Friedrich Wilhelm II*, 1–63; Stadelmann, *Friedrich Wilhelm III*, 1–99, 100–106, 123–34, 166–69; Bussenius, *Preußische Verwaltung*, 302–5.

⁵⁴ Warschauer, “Städtewesen,” 474.

⁵⁵ Dorn, “Prussian Bureaucracy III,” 272.

⁵⁶ Dorn, “Prussian Bureaucracy I,” 411.

⁵⁷ Straubel, *Biographisches Handbuch*, 1:426.

⁵⁸ Bussenius, *Preußische Verwaltung*, 70.

⁵⁹ Simsch, *Wirtschaftspolitik*, 62–63.

⁶⁰ Wandycz, *Lands of Partitioned Poland*, 3–11, 14–17, 20–23; Friedrich, *Other Prussia*, 1–19; Bussenius, *Preußische Verwaltung*, 75.

the field and administrative executors of projects, not only challenged the Polish nobility but also traditional Prussian bureaucrats. In so doing, they present a contrast to the role of technical experts in the building of the Canal du Midi. Mukerji has observed that these nascent French technocrats were limited in their independence and without power even though their expertise enhanced the administration's intellectual capacity to exercise territorial power and lessened the bureaucracy's dependence on patrimonial elites, the French nobility. The agents of logistical power in France were thus constrained, despite becoming "more like modern bureaucrats without being inserted into a rational bureaucracy."⁶¹

In Prussia, by contrast, a process of integrating technical experts into the central bureaucracy was strengthened by the concurrent systemization of technical knowledge by administrative means. What had been personal, local, or regional now belonged to the state, as was the case with water control, building styles, and even town location when infrastructure projects necessitated, such as with Driesen/Drezdenko. As project after project was completed, Prussia's technical experts, like Gilly and his compatriot Johann Albert Eytelwein (1764–1848), assembled and taught their compilations of existing vernacular and formal knowledge as they were applied to the built world and management of Prussian natural resources.⁶² Together they and other technical experts compiled their best practices in the short-lived journal on useful knowledge *Sammlung nützlicher Aufsätze und Nachrichten, die Baukunst betreffend*, which formed the conceptual bridge between field experiences in the partition area and the textbooks they produced for instruction in the Building Academy (*Bauakademie*) for surveying, architecture, and civil and hydraulic engineering, which Gilly and others founded in 1799.⁶³ Whereas Mukerji's French technical experts worked *for* the bureaucracy but not *in* it, Prussian technical experts not only worked in the *Oberbaudepartement*, but also enjoyed an enhanced status as civil servants as a result of a state examination system and a state-supported educational academy.

With the introduction of technical practices aimed at the transformation of the built world, "bureaucracies as knowledge" evolved in another respect: through regulations governing *things* in the built environment. A good example from the era of the Polish Partitions is fire prevention measures. Technical experts in the *Oberbaudepartement* tried to diminish the risk of fire through practical measures, such as moving ovens outside villages (or changing their design entirely, as with tiled *Kaminöfen*), implementing tile roofs, creating larger courtyards, separating buildings from one another, increasing the width of streets, adding trees to urban spaces, and in general imposing geometrical patterns based on careful measurement of urban and rural spaces.⁶⁴ The main reason for instituting building regulations in Berlin—ones in conformity with the state's standards of measure—was fire safety.⁶⁵

The same union of theory and practice was equally important in setting standards for the use of lightning rods, also a fire prevention technology. Gilly and Eytelwein underlined the need to ground recommendations concerning lightning rods in science.⁶⁶ Indeed, fire prevention measures, like other regulations, were a way for Prussia's civil engineers to fashion themselves as protectors of society. When addressing the topic, Gilly spoke as the compassionate technician, asking "is not one obligated to be concerned precisely about the preservation of the property of those poor fellow citizens for whom the replacement of what was lost would be extraordinarily difficult?"⁶⁷ As regulations governing the built world multiplied, Prussian technicians created a cultural discourse about their indispensability to the maintenance of the general welfare of society and state.

Max Weber remarked that "bureaucratic administration means fundamentally the exercise of control on the basis of knowledge."⁶⁸ He also posited that "specifically modern means of communication," like the administration of land, waterways, railroads, and the telegraph, were "pacemakers of bureaucratization" due to the demands for regulation and protection.⁶⁹ But he did not, it seems, see how the ability to manipulate the material world was also an exercise in control and domination. Nor did he recognize that bureaucracies, as knowledge-makers, could harbor iterative layers of technical knowledge useful for the modification of the

⁶¹ Mukerji, "Jurisdiction," 227.

⁶² Eytelwein, *Praktische Anweisung*; Eytelwein, *Handbuch* as well as other texts.

⁶³ Olesko, "Geopolitics."

⁶⁴ Zitelmann, "Kurze Darstellung," 101–2; Strecke, *Mathematisches Calcul*. Berson's *Handbuch der bürgerlichen Baukunst* promoted geometrical regularity as a prophylactic against fire. The urgency to improve *Kaminöfen* led to changes in their manufacture spearheaded by the first generation trained at the *Bauakademie*. Mende, *Tonwarenfabrik*, 139–68.

⁶⁵ GStA PK, II. HA GD, Oberbaudepartement Abt. 30 I, Nr. 215. Baureglement für Berlin, 1796–1797, fol. 90.

⁶⁶ GStA PK, II. HA GD, Oberbaudepartement Abt. 30 I, Nr. 148. Acta wegen Anbringung von dem Gewitter-Ableiter auf publicquen Gebäuden, 1797–1827, fol. 3; Gilly and Eytelwein, *Kurze Anleitung*.

⁶⁷ Gilly, "Über Feuerlöschungsanstalten," 106.

⁶⁸ Weber, *Social and Economic Organization*, 330.

⁶⁹ Weber, "Bureaucracy," 213.

natural and built worlds. This examination of the relationship between the *Indaganda* survey and Prussia's built world projects accentuates the critical roles of information gathering and the curation of technical knowledge in the exercise of logistical power.

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The author has no competing interests to declare.

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